

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claims 1, 5, 6, and 8 are currently being amended. The amendments to claims 1, 5, and 6 are to improve their grammar and do not change the scope of the claims.

New claim 12, dependent upon claim 1, has been added. Support for new claim 12 can be found at least on page 9, lines 6-8 of the specification.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

Claims 9-11 have been withdrawn from consideration.

After amending the claims as set forth above, of the claims under consideration, claims 1-8 and 12 are now pending in this application.

Rejections under 35 U.S.C. §§ 102 and 103

Claims 1-7 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Hayashi et al. '580 (hereafter "Hayashi '580"), Sung '723 (hereafter "Sung '723"), Sung et al. '507 (hereafter "Sung '507"), Sung et al. '298 (hereafter "Sung '298") or Chen et al. WO 95/35152 (hereafter "Chen '152"). Claims 1-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Blanchard et al. '419 (hereafter "Blanchard '419") in view of Sung '723. Claims 1-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Mussman et al. '140 (hereafter "Mussmann '140") in view of Sung '298. Claims 1-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication 2003/0021745 (hereafter "Chen '745"). Applicants respectfully traverse these rejections for at least the following reasons.

Independent claim 1 is directed to an exhaust gas purifying catalyst including a monolithic substrate, a first catalytic layer formed on the monolithic substrate, and a second catalytic layer formed on the first catalytic layer. The first catalytic layer contains: (1) at least

one noble metal selected from the group consisting of rhodium, platinum and palladium, (2) a compound of at least one metal selected from the group consisting of alkali metal, alkaline earth metal and rare earth metal, and (3) alumina. The second (outer) catalytic layer contains: (1) rhodium, (2) at least one noble metal selected from the group consisting of platinum and palladium, (3) a compound of at least one metal selected from the group consisting of alkali metal, alkaline earth metal and rare earth metal, and (4) alumina. Significantly, claim 1 also recites that the content of the compound of the at least one metal in the second catalytic layer (the layer on the first catalytic layer) is larger than that in the first catalytic layer.

Providing that the content of the compound of the at least one metal in the second catalytic layer is larger than that in the first catalytic layer provides advantages in preventing sulfur poisoning (see present specification, page 9, lines 6-8, for example), while still allowing that NOx can be effectively absorbed, released and reduced. The catalyst compound with alkali metal, alkaline earth metal and/or rare earth metal acts as an absorbing (trapping) agent for NOx and SOx. Because the content of the compound in the second (outer) catalytic layer is larger than that in the first (inner) catalytic layer, the second catalytic layer effectively adsorbs SOx. Because adsorbed SOx is readily released from the second (outer) layer as compared to the first (inner) layer, sulfur-poisoning of the catalyst can be prevented thereby allowing the catalyst to effectively reduce or remove NOx without lowering its NOx adsorbing ability even when the exhaust gas is in the lean region. In contrast to some prior approaches, the catalyst as recited in claim 1 takes a multi-layer structure approach where the second (outer) catalytic layer has a larger content of the above recited compound, thereby preventing sulfur-poisoning. Thus, according to the present invention as recited in claim 1, NOx can be effectively adsorbed, released and reduced (removed) while at the same time preventing sulfur-poisoning of the catalyst.

None of the references cited in the above rejections of the claims suggest that the compound as recited in the context of claim 1 is contained in a larger amount in a second (outer) layer than in a first (inner) layer of the catalyst with the resultant advantage that sulfur poisoning is prevented. Thus, the cited references neither anticipate claim 1 or render the present claim 1 obvious taken either singly or in combination. If the Examiner maintains the above rejections, applicants respectfully request that the Examiner specifically point out where in the references there is a disclosure of a greater content of a compound of alkali

metal, alkaline earth metal and/or rare earth metal in a second (outer) catalytic layer as compared to a first (inner) catalytic layer such that sulfur poisoning is prevented.

→ Independent claim 8 is directed to an exhaust gas purifying catalyst including a catalytic layer have a surface section and an inner section located inside relative to the surface section. Claim 8, as amended, recites that the difference in concentration of the compound (of at least one metal selected from the group consisting of alkali metal, alkaline earth metal and rare earth metal) between the surface section and the inner section of the catalytic layer is larger than 10%. Thus, the concentration of the compound in the surface section is greater than the concentration of the compound in the inner layer. Accordingly, for at least the same reasons discussed above with respect to claim 1, applicants submit that claim 8 is patentable over the references cited in the above rejections.

Dependent claims 2-7 and 12 ultimately depend from claim 1 and are patentable for at least the same reasons, as well as for features recited therein which render these claims patentable when considered as a whole. For example, dependent claim 2 recites that the content of the compound in the first catalytic layer is higher than 1:1 and not higher than 3:1. Providing that the content is not higher than 3:1 reduces thermal deterioration of noble metals in the outer catalytic layer (see present specification, page 9, lines 8-11), a feature not suggested in the references cited in the rejection.

For at least the above reasons, applicants submit that the rejections of the claims under 35 U.S.C. 102 and 103 have been overcome, and respectfully request that the rejections be withdrawn.

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or

even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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